

WHAT IS CLAIMED IS:

1. A power supply apparatus comprising:
a sequence control unit to which a power source control chip is added;
5 output producing means for producing an output conforming to a PWM signal from said power source control chip, and feeding back an output detection signal to said power source control chip; and
a signal line for connecting said power source control chip and said output producing means together,
10 wherein a modulated wave amplitude-modulated with said PWM signal as a carrier wave and with said output detection signal as a modulating wave is transmitted to said signal line.
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2. A power supply apparatus comprising:
an image processing unit to which a power source control chip is added;
output producing means for producing an output
20 conforming to a PWM signal from said power source control chip, and feeding back an output detection signal to said power source control chip; and
a signal line for connecting said power source control chip and said output producing means together,
25 wherein a modulated wave amplitude-modulated with said PWM signal as a carrier wave and with said output detection signal as a modulating wave is

transmitted to said signal line.

3. An image forming apparatus comprising:
a power supply apparatus as recited in Claim 1,
5 wherein a sequence control unit of said power
supply apparatus comprises an ASIC and effects
sequence control.

4. An image processing apparatus comprising:
10 a power supply apparatus as recited in Claim 2,
wherein an image processing unit of said power
supply apparatus comprises an ASIC and effects image
processing.

15 5. An image forming apparatus according to
Claim 3, wherein output producing means of said power
supply apparatus produces a high voltage output for
at least one of charging, transferring, developing,
sheet separating, cleaning and charge removing.

20 6. An image processing apparatus according to
Claim 4, wherein output producing means of said power
supply apparatus produces a high voltage output for
at least one of charging, transferring, developing,
25 sheet separating, cleaning and charge removing.

7. A switching power supply apparatus

comprising:

voltage producing means for producing a
predetermined voltage; and

controlling means for controlling the voltage
5 by a digital circuit,

wherein said voltage producing means has a
transformer, rectifying and smoothing means for
rectifying and smoothing an output of said
transformer, driving means for driving said
10 transformer, detecting means for detecting an output
obtained by said rectifying and smoothing means, and
modulating means for modulating with a detection
output detected by said detecting means as a
modulating wave, and

15 wherein said controlling means has demodulating
means for demodulating the detection output from a
signal modulated by said modulating means, sample
hold means for sampling and holding said demodulated
detection output, A/D converting means for converting
20 an output of said sample hold means into a digital
signal, comparing means for comparing an output of
said A/D converting means with an output target value,
a counter adapted to be operated in conformity with
an output of said comparing means, and PWM signal
25 producing means for producing a PWM signal for
driving said driving means.

8. A switching power supply apparatus according to Claim 7, wherein said modulating means modulates with the PWM signal for switching said driving means as a carrier wave.

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9. A switching power supply apparatus according to Claim 8, wherein said modulating means amplitude-modulates the carrier wave.

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10. A switching power supply apparatus according to Claim 9, wherein said modulating means varies a signal level of a period for which said PWM signal switches on said driving means to thereby amplitude-modulate.

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11. A switching power supply apparatus according to Claim 9, wherein said modulating means varies a signal level of a period for which said PWM signal switches off said driving means to thereby
20 amplitude-modulate.

12. A switching power supply apparatus according to Claim 7, wherein said controlling means is made integral with an ASIC for sequence control as
25 a control chip.

13. A switching power supply apparatus

according to Claim 7, wherein said controlling means is made integral with an ASIC for image processing as a control chip.

5 14. An image forming apparatus comprising:
 a switching power supply apparatus as recited
in Claim 7,

 wherein said switching power supply apparatus
is a high voltage source for image forming.

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